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(54) PRODUCTION OF QUARTZ GLASS POWDER

(57) Abstract:

PURPOSE: To effectively use an industrial waste by calcining a specified porous silica powder and then firing the calcined material at the temp. higher than the calcining temp., thereby making the powder non-porous and transparent.

CONSTITUTION: Silica fine powder having 10-400m<sup>2</sup>/g specific surface area is dispersed in water by the weight same or twice as that of powder to obtain a slurry. This slurry is dehydrated and dried at about 100°C to obtain an aggregated porous silica cake. This

cake is pulverized in a ball mill or the like, classified with a trommel sieve or the like to obtain a porous silica powder having 20-50m<sup>2</sup>/g specific surface area. This powder is treated with acid (e.g. with hydrochloric acid) and/or to impregnated with a soln. containing a dopant material (e.g. neodymium). The treated powder is calcined at 800-1300°C in a dehydrating gas atmosphere such as thionyl chloride. Then the calcined material is fired at 1450-1500°C in vacuum in an electric furnace or the like to obtain a non-porous quartz glass powder.

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